**The Comptroller General
of the United States**

Washington, D.C. 20548

Decision

Matter of: Star Technologies, Inc.

File: B-233489; B-233489.2

Date: March 16, 1989

DIGEST

1. Agency determination that protester's proposal was technically unacceptable and not in the competitive range is reasonable where prior to submission of proposals, in response to protester's question, the agency advised the protester in writing that under the agency's interpretation of the solicitation the protester's intended technical approach was not acceptable, and protester nevertheless submitted a proposal that both used the rejected approach and failed to comply with other mandatory technical requirements.

2. A technically unacceptable proposal need not be included in the competitive range, irrespective of its low price, where the proposal could not be made acceptable without major revisions.

3. Contention that agency improperly used an unannounced evaluation criterion--ease of programming--in evaluating protester's proposed computer equipment is without merit where the record shows that the evaluation was based on the criterion set out in the solicitation--direct memory access--and agency considered ease of programming, the reason underlying the direct memory access requirement, solely in the context of deciding whether that requirement should be waived.

4. Protest that awardee's proposal is technically unacceptable is denied where the record fails to support the allegation.

DECISION

Star Technologies, Inc., protests the award of a contract to Numerix Corporation under request for proposals (RFP) No. N62269-88-R-0800, issued by the Department of the Navy for a digital signal processor. Star has filed two

protests. In the initial protest, Star contends that the agency improperly awarded the contract to the highest-priced offeror on the basis of initial proposals without making a competitive range determination and without conducting discussions. In the second protest, filed after Star's receipt of the agency report on the initial protest, Star contends that the agency improperly applied an unannounced evaluation criterion (ease of programming) during the evaluation of the protester's proposal, and that the awardee's offer was technically unacceptable.

We deny the protests.

The RFP's statement of work (SOW) sought a commercial digital signal processor (DSP) for an anti-submarine warfare engineering laboratory.1/ The Navy reports that the array processor (AP) is the most important element of the DSP, and that the solicitation was designed to elicit offers of APs that were both fast and easy to use. The Navy viewed the AP's speed as critical because the equipment would simulate "real time" operations--reacting to real-world events as they occurred--such as tracking the position of an evading submarine. The need for ease of use emanates from the Navy's employment of the equipment for "concept validation" work which includes non-reiterative problems (processing signal data collected in the field, simulating field conditions, emulating a variety of military DSPs, and analyzing/testing new processing algorithms) requiring constant changes in programming. Consequently, the ease of use or "user friendly" requirement translated principally into a need for minimal software programming.

The RFP, issued on July 8, 1988, provided that technical proposals would be evaluated on an acceptable/unacceptable basis with award being made to the lowest-priced technically acceptable offeror. To ensure the offered APs had the requisite speed, the agency required offerors to run a government-furnished benchmark computer program in 35 seconds or less on the base configuration (8 sonobuoys) of the proposed AP. Minimal programming was ensured by

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1/ The Navy reports that the DSP processes digital signals received from sonobuoys (floating acoustical receivers dropped into the ocean by ships and aircraft to listen for underwater sounds made by submarines). The DSP enhances sonobuoy signal data to a point where extraneous background noise is effectively eliminated and only submarine sounds remain. The resulting digital data is used to identify the type and the location of the submarine making the sound.

requiring APs with direct memory access,2/ and restricting offerors to a single specified modification (vectorization) to the benchmark program.

On July 18, before initial proposals were due, Star asked the Navy if its AP (which accessed data memory through a memory addressor and working cache memory) complied with the SOW requirement for direct memory access. The Navy informed Star, by letter of August 12, that Star's proposed arrangement was unacceptable.

On August 22, the due date for initial proposals, three proposals--from Star ($950,681), Universal ($1,486,904) and Numerix (four alternate proposals ranging from $1,611,251 to $2,146,541)--were received. The agency evaluated each proposal on the specified pass/fail basis. Star's proposal was the subject of more than one evaluation. The agency reports that it was initially uncertain about the technical acceptability of Star's proposal, but in the end decided that it was technically unacceptable and that the deficiencies were such that the protester could not correct them. Both Star and Universal were rejected as technically unacceptable, leaving Numerix as the only technically acceptable offeror. On October 28, after price negotiations, the Navy awarded a contract to Numerix.

Star initially argues that the agency erred in making award to Numerix, a higher-priced offeror, without conducting discussions with Star. As support for its position, Star cites Hall-Kimbrell Environmental Services, Inc., 66 Comp. Gen. 280 (1987), 87-1 CPD ¶ 187, where we held that an agency may not accept an initial proposal that is not the lowest considering only cost and cost-related factors listed in the RFP where there would be at least one lower-priced proposal within the competitive range. That limitation on an agency's authority to make an award on the basis of initial proposals applies only where the lower-priced offeror should have been included in the competitive range. Here, in contrast, based on a thorough review of the record

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2/ The SOW provides: "The adders and multipliers in the array processor shall be able to directly access all array processor data memory." The Navy explains that with direct memory access the hardware's architecture is transparent to the programmer. In other words, the programmer does not have to be familiar with the inner workings of the hardware. The programmer simply writes the source code and relies on the software compiler to convert the code into machine readable code that conforms to the equipment's architecture.

(including review by those knowledgeable in computer science), we find no reason to question the agency's determination that Star's proposal was technically unacceptable and could not be made acceptable without major revisions. Accordingly, Star clearly was outside the competitive range and the agency thus was not required to hold discussions with Star before making award to Numerix. Mictronics, Inc., B-228404, Feb. 23, 1988, 88-1 CPD ¶ 185.

Under Federal Acquisition Regulation (FAR) § 15.609(a), the competitive range must include all proposals that have a "reasonable chance of being selected for award," and when there is doubt as to whether a proposal is in the competitive range, the proposal should be included. On the other hand, a contracting agency is not required to permit an offeror to revise a technically unacceptable initial proposal where the deficiencies are so material that major revisions would be required to make the proposal acceptable. DBA Systems, Inc., B-228509, Jan. 26, 1988, 88-1 CPD ¶ 78. In reviewing these matters we neither reevaluate the proposals nor make any determinations about their respective merits. This is the responsibility of the contracting agency, which is most familiar with its needs and must bear the burden of any difficulties resulting from a defective solicitation. Tiernay Turbines Inc., B-226185, June 2, 1987, 87-1 CPD ¶ 563.

Here, the Navy determined that Star's proposal was technically unacceptable for three reasons (failure to meet the direct memory access requirement; improper modification of the benchmark program; and failure to run the benchmark of the proposed AP) which could not be remedied given the equipment Star proposed. In arriving at this determination the Navy brought in senior technical advisers and considered the issue of Star's technical acceptability at length. The intensity of the evaluation appears attributable to a conflict between, on the one hand, the Navy's interests in both Star's state-of-the-art hardware and in increasing competition, and, on the other, the fact that the Star's technical approach conflicted with the solicitation's mandatory technical requirements.

The first evaluation found Star's proposal technically acceptable, but only if two mandatory technical requirements (direct memory access and the limitation of modifications to the benchmark) were waived. Star argues that this evaluation reflects the agency's determination that Star's cache memory was not transparent to the user and that agency programmers would have to deal with certain architecture considerations if Star's APs were purchased.

A second evaluation was made after the contracting officer questioned the evaluators' apparently inconsistent conclusion that Star was technically acceptable, but unable to meet the mandatory technical requirements. The second evaluation moved Star further away from the competitive range, finding Star's proposal only susceptible to being made acceptable, and then only if the agency agreed to waive the direct memory access requirement and Star reran the benchmark without the prohibited modifications.

Subsequent telephone contacts with Star led the Navy to conclude that the benchmark could not be rerun without the modifications because some of the modifications were inherent in the architecture of Star's AP. When the evaluators were apprised of this they finally concluded that Star's proposal was technically unacceptable. Star agrees that the conversations took place, but denies telling the agency that its AP could not run an unmodified benchmark because of architectural considerations.

Because of the evaluators' interest in Star's proposal, the Navy had senior technical personnel review the validity of the need for the mandatory requirements. The agency found that Star's lack of direct access memory and use of cache memory instead was responsible for at least two of Star's benchmark violations.3/ The Navy reports that it did not at first grasp the full implications of Star's nine unauthorized modifications to the benchmark, or the greater amount of complex, machine-dependent programming they would entail when the APs were used in the future. The agency realized that Star's approach to cache memory provided the required speed, but did not provide automatic memory management (i.e., automatic storage and retrieval of data between main memory and the cache) and therefore the architecture was not transparent to the programmer. Because of the lack of automatic memory management, the programmer must manage the memory (in the same way the improper modifications did) by specifying in his program the movement of data between main memory and the cache. This means that the programmer has to understand the hardware's architecture in order to know where required data is stored in main memory before a program can be written directing its transfer to

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3/ Star's benchmark used five subroutines which required a group of declarations for cache memory, and used vector calls to the storage move processor to transfer data between main memory to cache memory. These benchmark violations meant additional programming every time a new program was used.

cache memory. The agency reports that it lacks the necessary skilled personnel to engage in the amount and kind of programming required to run Star's APs. Consequently, the agency determined that the requirement must stand as solicited and that Star's proposal had to be rejected.

The preproposal correspondence between Star and the Navy clearly put Star on notice that its cache memory approach did not comply with the agency's interpretation of the direct memory access requirement. Since Star's cache approach also required Star to make prohibited modifications to the benchmark in order to accommodate the cache memory's need for specifically programmed memory management, it should have been obvious to Star before it submitted its proposal that its technical approach ran contrary to at least two mandatory technical requirements. We find Star's arguments with regard to the benchmark modifications--to the effect that: (1) Star only replaced loops with calls to vector subroutines resident in Star's library; (2) that Star merely wrote vector data move calls into the program, which is a permitted replacement of loops with calls to vector subroutines; and (3) that the RFP did not prohibit double buffering--without merit. The RFP provided that the benchmark program could only be modified by replacing loops in the benchmark program with calls to a vector subroutine, with the routines residing in the library provided by the offeror. Our review of the record persuades us that the Navy is correct and that Star's changes to the benchmark have nothing to do with the loops in the Navy algorithm; rather, they are required to operate Star's AP.

Star violated a third mandatory requirement, that the benchmark be run on the actual AP that the offeror proposed to furnish, when it ran the benchmark on a production ST-50 and then extrapolated the results to the ST-50*1 that was proposed. Star claims that despite different backplane configurations, there is no significant difference between the two APs since they are functionally and electrically identical and either machine would produce identical results without any changes to the software. The evaluators questioned the validity of the extrapolation and concluded that this was another reason for finding the Star proposal unacceptable. We have upheld similar determinations in the past, finding that contracting agencies can properly insist on having actual hardware demonstrated notwithstanding a protester's claim that demonstration of another machine should be acceptable since the two machines are functionally equivalent. Telefile Computer Products, Inc., B-186983, Oct. 28, 1977, 77-2 CPD ¶ 328. Consequently, we agree with the Navy that Star's declaration that it ran the benchmark on a "functionally identical" AP to the one proposed is

irrelevant since Star clearly did not use the AP proposed and the two machines' differing backplanes are a physical and not a semantic difference as Star claims.

To the extent that Star implies that enforcement of the direct memory access requirement is unreasonable because the term is ambiguous, the argument is untimely. Star was required to protest any such deficiencies in the specifications prior to the closing date for receipt of initial proposals so that they could be resolved at an early stage in the procurement. See Tameran, Inc., B-232126, Oct. 31, 1988, 88-2 CPD ¶ 416. This is especially true where, as here, the agency specifically makes the protester aware before the closing date for submission of offers of the agency's contrary interpretation of the language in question. See Captain Hook Trading Co., B-224013, Nov. 17, 1986, 86-2 CPD ¶ 566.

Regarding Star's contention that the agency improperly applied an unannounced evaluation criterion (ease of programming) during the evaluation, we see no merit in this contention. The agency's need for ease of programming was the reason for the requirement in the RFP that the APs offered provide direct memory access. However, the underlying need for ease of programming did not determine whether Star's proposal offered the required direct memory access; rather, as noted above, Star's cache memory approach simply did not meet the agency interpretation of the requirement. Consequently, Star's proposal failed the technical evaluation once the agency decided that it would not amend the solicitation to waive the direct memory access requirement. This is not to say that the agency did not consider ease of programming. Obviously, ease of programming was considered in the context of whether the agency should waive the direct memory access requirement. In our view, this consideration of ease of programming does not amount to the improper use of an unannounced evaluation criterion.

Finally, Star contends that Numerix submitted a technically unacceptable offer. Generally, a protester that takes exception to a material requirement is not an interested party to challenge the acceptability of another offeror's proposal because even if the protest were sustained it would not be in line for award; however, where there is only one acceptable offeror, such a protester is an interested party because if the protest is sustained negotiations would have to be reopened or the solicitation canceled and the requirement resolicited and the protester would be able

to submit another offer. <u>Vacco Industries</u>, B-230036,
Apr. 21, 1988, 88-1 CPD ¶ <u>393.</u> Therefore, we will consider
Star's arguments regarding Numerix's proposal.

Star contends that the communications pathway between
Numerix's two IOC-200 databuses violates the RFP. Star
characterizes the pathway as a bottleneck since it can only
carry transmissions at a rate of 12.5 mb per second which
means that Numerix has violated mandatory provisions requir-
ing: (1) access global data memory at a rate of at least 20
mb per second; (2) that digital input channels write
directly to data memory; and (3) that the digital output
channel read directly from global memory. Numerix has
submitted for our <u>in camera</u> review an explanation of the
operation of its proposed system which, after consultation
with our technical staff, we find consistent both with the
system offered in its technical proposal and the Navy's
determination that Numerix complied with the above require-
ments.

Star further contends that the standard Numerix AP has only
16K of program memory (1,500 lines of Fortran) and this is
insufficient to meet the mandatory program memory require-
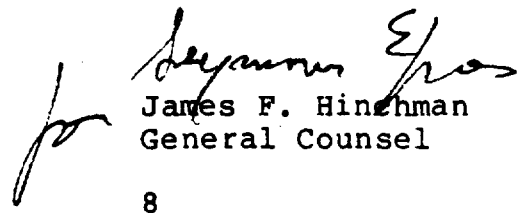ment which reads:

> "1.5 The array processor shall have a minimum
> high speed storage capacity (main memory) of:
>
> Program Memory - 4000 lines of Fortran
> Data Memory - 4 Mbytes".

Numerix's APs have both a program memory and a main memory.
The Navy reports that each Numerix AP has 16Mbytes of main
memory, and has available 64Kwords (128 bits wide) of main
memory dedicated for program storage. This translates into
6,000 lines of Fortran code. Star also objects to the
notion that the required program memory can reside in a
location other than Numerix's actual 16K program memory. We
see no merit in this objection since the RFP clearly
specifies that the program memory is a subset of the main
memory.

Finally, Star alleges that Numerix may have failed to
propose the AVP (attached vector processing) software
system. This allegation also lacks merit since Numerix's
proposal offers the AVP software.

The protests are denied.

James F. Hinchman
General Counsel